

2017

Portland Fire Weather

Operating Plan



Picturesque Mt. Hood – Mt. Hood Complex August, 2006 – Photo by Scott Weishaar

PORTLAND FIRE WEATHER

Changes for 2017:

- **Creation of new fire zone 663 – Eastern Gifford Pinchot**
- **New zone numbers for Washington portions of 601, 602 and 604**

LOCATION

National Weather Service Forecast Office
5241 NE 122nd Avenue
Portland, OR 97230-1089

HOURS

The National Weather Service Office is open 24 hours a day, 7 days a week. The fire weather duty desk will be staffed with a **CERTIFIED** fire weather forecaster between the hours of 0630 and 1530 seven days a week during fire season, normally from Memorial Day through mid-October. The fire weather desk is staffed with a **CERTIFIED** fire weather forecaster from 0700 to 1600 Monday through Friday during Spring burning (mid to late March through Memorial Day), and also during the fall burning period (mid-October through early November).

STAFF

David Bright	Meteorologist in Charge
Tyree Wilde	Warning Coordination Meteorologist
Scott Weishaar	Fire Weather Program Leader, IMET
Shawn Weagle	Asst. Fire Weather Program Leader, IMET
Jon Bonk	Fire Weather Forecaster, IMET

CONTACT

Telephone

Fire Weather Desk	503-326-2420
Lead Forecaster (24 hrs)	503-326-3720
FAX	503-326-2598

Internet: <http://www.wrh.noaa.gov/firewx/?wfo=pqr>

Facebook page:

<http://www.facebook.com/US.NationalWeatherService.Portland.gov>

Office Twitter page: <https://www.twitter.com/NWSPortland>

Twitter handle: @NWSPortland

Email

scott.weishaar@noaa.gov

shawn.weagle@noaa.gov

FORECAST DISTRICT

Portland services Oregon fire weather zones 601-608 and 612. Portland also covers Washington fire weather zones 663-665, and 667. This area covers:

Northwest Oregon and Southwest Washington, North Oregon Cascades including the Columbia River Gorge (to about Hood River). South Washington Cascades and adjacent lowlands of Clark County.

See the attached map for a graphic description of individual areas/zones of the Portland district.

AGENCIES SERVED

U.S. Forest Service (USFS)

U.S. Bureau of Land Management (BLM)

Oregon Department of Forestry (ODF)

Washington Department of Natural Resources (WDNR)

Various urban and rural local fire districts

FORECAST SERVICES

1. FIRE WEATHER GRIDS

Fire Weather grids from the Portland Fire Weather Office can be found at:

<http://digital.weather.gov>

2. RED FLAG WARNING/FIRE WEATHER WATCH

Fuels must be critically dry and fire danger moderate to high before a Red Flag Warning or Fire Weather Watch is issued from the Portland office. Evaluations of fuel conditions will be made in accordance with current NFDRS Energy Release Component (ERC) values and in consultation with fire managers.

FUELS STATUS DETERMINATION

Since 2015, NWCC no longer produces 7-day Dryness Level forecasts. Instead, NWCC will issue a 7-day Significant Fire Potential or Overall Fire Environment forecast. The Overall Fire Environment includes the former Dryness Level inputs, but also incorporates stability, wind and forecast lightning amounts. Thus, another objective means to determine fuel availability had to be determined.

The Portland Forecast Office will continue to experiment with a concept similar to the NWCC Dryness Levels, using zone-average ERC percentiles. The ERC values for all RAWs sites within the Portland Fire weather area will be evaluated daily, and then an overall zone color-code assigned: For a YELLOW or BROWN zone designation, one-half or more RAWs within a zone must have an individual ERC value at or above the 71st percentile.

70th PERCENTILE VALUE or less = GREEN
71st – 79th PERCENTILE VALUE = YELLOW
80th PERCENTILE or greater = BROWN

Assuming these conditions are met, Fire Weather Watches and Red Flag Warnings are issued for the following events:

A. COMBINATION OF WIND AND LOW HUMIDITY

Daytime: RH 25% or less **AND** 10-minute wind speed 10 mph AND/OR frequent gusts to 20 mph or more for 4 hours.

Night: RH 35% or less **AND** 10-minute wind speed of 15 mph AND/OR gusts to 25 mph or more for 3 hours.

B. DRY AND UNSTABLE AIR MASS

Mid and/or High level Haines 6, RH 25% or less, **AND** critical fuel conditions.

C. LIGHTNING

Scattered thunderstorm coverage, critical fuels **AND** no appreciable change in fuel conditions after the event.

RED FLAG VERIFICATION

Red Flag warnings will be verified using the following criteria:

A. COMBINATION OF WIND AND LOW HUMIDITY

NIGHTTIME CRITERIA:

ZONES 601, 602, 664 AND 665: Two stations (RAWS) must report 35% humidity or less **AND** 10-minute wind speed of 10 mph **AND/OR** gusts to 20 mph or more for three hours in an 8-hour time block. **Key RAWS:** Cedar Creek, Rockhouse1, and South Fork.

ZONES 603 AND 612: Rockhouse1 RAWS reporting 35% humidity or less **AND** 10-minute wind speed of 15 mph **AND/OR** gusts to 25 mph or more for four hours in an 8-hour block **AND** one other RAWS reporting 35% humidity or less **AND** 10-minute wind speed of 10 mph **AND/OR** gusts to 20 mph or more for two hours. **Key RAWS:** Rockhouse1, Goodwin Peak, High Point, and Cannibal Mountain.

ZONE 604 and 667: Two stations (airports) must report 30% humidity or less **AND** 2-minute wind speed of 15 mph **AND/OR** gusts to 25 mph or more for at least four hours in an 8-hour block. Typically occurs in the north part of the valley. **Key STATIONS:** Troutdale, Portland, Vancouver, and Hillsboro.

ZONES 605, 607, AND 660: One station (RAWS) must report 35% humidity or less **AND** 10-minute wind speed of 10 mph **AND/OR** gusts to 20 mph or more for four hours in an 8-hour block, **AND** at least **TWO** other stations reporting 35% humidity or less **AND** 10-minute wind of 10 mph **AND/OR** gusts to 20 mph for at least **TWO** hours. **Key RAWS:** Horse Creek, Log Creek, Wanderer's Peak, Kosmos, Canyon Creek, Orr Creek, Elk Rock, and 3-Corner Rock. **NOTE:** Includes stations from zone 659.

ZONE 663: Buck Creek RAWS must report 35% humidity or less **AND** 10-minute wind speed of 10 mph **AND/OR** gusts to 20 mph or more for four hours in an 8-hour block. Dry Creek RAWS (eastern 660) must also report 35% humidity or less **AND** 10-minute wind speed of 10 mph **AND/OR** gusts to 20 mph or more for at least **TWO** hours.

ZONES 606 AND 608: One station (RAWS) must report 30% humidity or less **AND** 10-minute wind speed of 10 mph **AND/OR** gusts to 20 mph or more for at least four hours in an 8-hour block, **AND ONE** other station must report the same conditions for at least **ONE** hour. **Key RAWS:** Brush Creek, Trout Creek, Yellowstone, and Emigrant.

DAYTIME CRITERIA (ALL ZONES):

At least two stations within a zone must report 25% humidity or less **AND** wind-speed of 10 mph or more **OR** gusts to 20 mph or more (except 15 mph or gusts to 25 mph or more in zones 604 and 667) for at least four hours in an 8-hour block.

Typically for east wind (offshore flow), but can occur in the Coast Range and central/south Willamette Valley with north to northeast wind. Can also occur in the Central Cascades and foothills with shallow marine surges (west to northwest wind).

B. CRITICALLY DRY AND UNSTABLE AIR MASS (HAINES INDEX 6)

At least **ONE** station within a zone must report 25% humidity or less, measure a mid and/or high-level Haines 6, or exhibit inferred mid and/or high-level Haines 6 characteristics, **AND** fuel conditions are in the “BROWN”, or “YELLOW” based on forecaster discretion.

C. LIGHTNING IN COMBINATION WITH DRY FUELS

“Dry thunderstorm” Red Flag criteria is defined as follows: *Abundant lightning in conjunction with sufficiently dry fuels.*

Abundant Lightning:

- 1) Number of lightning strikes that meet climatologically significant criteria, or
- 2) Areal coverage of lightning such as “Scattered” or $\geq 25\%$

Sufficiently Dry Fuels:

- 1) No appreciable change in fuel conditions the day of and the day following a thunderstorm event, or
- 2) ERC or BI values meeting climatologically significant percentiles, or
- 3) Land management declaration

This is a very rare event which, climatologically, has the highest likelihood of occurrence in the south half of the Willamette N.F..

Fuel Conditions **SHOULD** be in the “BROWN”, and expected lightning frequency such that multiple starts (5-7) are expected. (Typically “scattered” thunderstorm coverage). Under unusual or extreme conditions, a Red Flag Warning can also be issued when fuel conditions are “YELLOW”. Basically, “scattered” thunderstorms that do not produce enough precipitation to appreciably change the overall fuel conditions from “BROWN” or high-end “YELLOW”.

3. SPOT FORECASTS

Detailed weather information beyond what is presented in the general forecast may be obtained with a spot forecast request. Spot forecasts may be requested by a telephone

call to the fire weather forecaster or through the spot forecast request web page available on the Portland fire weather web page at:

<http://www.weather.gov/spot/>

NEW SPOT FORECAST WEB PAGE

Click on the “***Submit Spot Request***” box to get to the spot request form. To monitor existing spots and to check the status of spot requests, click on the “***Monitor***” box. Contact the Portland Fire Desk for any questions or guidance using the new spot page.

4. GENERAL FORECASTS

Fire Season: Regularly scheduled general fire weather forecasts are issued twice per day by certified fire weather forecasters at 0900 and 1445.

Prescribed Burning Season: Regularly scheduled land management forecasts are issued by certified fire weather forecasters Monday through Friday at 0900 and 1430.

The Portland office will include wind gusts when the 10-minute wind speed is 10 mph or greater.

“Overall Fire Environment” (as developed by the Northwest Coordination Center) for the NWS Portland forecast district will no longer be included in the morning forecast. Refer to the NWCC Predictive Services web site for more information. www.nwccweb.us

5. NFDRS TREND FORECASTS

Numerical point forecasts for NFDRS stations are prepared and disseminated to WIMS by 1530 each afternoon from April through mid-October. The point forecasts are used to compute the expected NFDRS indices valid the following day. The number of NFDRS point forecasts made by the weather office depends only on the number of NFDRS observations input into WIMS by the fire agencies. If observations are not entered into WIMS by 1500 however, a forecast will not be produced for that station.

UPDATE: NFDRS will undergo a major change beginning with the 2017 fire season. This may impact the generation of NFDRS forecasts, including the forecast elements.

TELEPHONE BRIEFINGS

Daily internet conference call: Portland fire weather conducts a daily weather briefing at 0940 PDT via a conference call from about early June through early October. Fire weather users are encouraged to participate. The forecaster hosting the briefing will

verbally highlight current and forecast fire weather conditions with the help of an internet web page. Conference call participants can follow along with the discussion while viewing graphics displayed on the web page. Conference telephone numbers (and passcodes) can be obtained by contacting the Portland weather office. The URL for the briefing graphics is: <http://www.wrh.noaa.gov/pqr/fwv.php>. Graphics will be available by 0700 PDT.

Unscheduled telephone briefings: Verbal weather briefings can also be obtained at any time. A certified fire weather forecaster should be requested to conduct the briefing during fire weather hours. Otherwise, a briefing will be available from the general forecast staff.

INCIDENT METEOROLOGIST SERVICES

Portland has three certified Incident Meteorologists (IMETs) on staff available for wildfire, HAZMAT, or other emergency dispatches. To request an IMET, contact the appropriate fire agency dispatch office or the National Fire Weather Operations Coordinator (NFWOC) in Boise, ID.

OTHER SERVICES

FIRE WEATHER TRAINING AND LECTURES

An experienced fire weather forecaster will be available to help instruct the weather sections of standard fire behavior training courses offered by federal, state and local government fire agencies. This includes S-190 through S-590 and other courses. In addition, a forecaster will also be available for special speaking engagements. For scheduling purposes, requests for an instructor or speaker should be made at least three weeks in advance.

To request an instructor contact Shawn Weagle at Portland NWS Forecast Office at (503) 326-2420 or by email at shawn.weagle@noaa.gov.

SOCIAL MEDIA

NWS Portland has a Facebook page, Twitter account, and YouTube Channel. The Office Twitter webpage is:

[Twitter webpage](#)

The Office Twitter handle is: **@NWSPortland**

A YouTube weather briefing may be available during critical fire weather events. Web links to these briefings will be disseminated to users when applicable.

Information about current Fire Weather may be included in these social media feeds, but such information is intended as supplemental information for the general public; it is not intended to meet the specialized needs of the wildland firefighting community.

Portland Fire Weather Zones



GEOGRAPHIC ZONE DESCRIPTIONS

Zone 601 – North Oregon Coast

Represents the North Oregon coastal strip including adjacent west slopes of the Oregon Coast Range. This zone includes the north portion of the Siuslaw N.F. and ODF protected private land.

Extends east-west from the crest of the Oregon Coast Range to the Pacific Ocean. Extends north-south from the Columbia River to Oregon State Highway 22 along the eastern boundary of ODF regulated use area NW-2.

Zone 664 – South Washington Coast including the West Willapa Hills

Represents the South Washington coastal strip, including adjacent west slopes of the Willapa Hills. The boundary extends from the Columbia River then north to encompass Pacific County. The zone extends east to include Wahkiahkum County.

Zone 612 – Central Oregon Coast

Represents the Central Oregon coastal strip including adjacent west slopes of the Oregon Coast Range. Includes southern portions of the Siuslaw N.F. and ODF protected private land.

Extends east-west from the crest of the Oregon Coast Range to the Pacific Ocean. Extends north-south from Oregon State Highway 22 to the Umpqua River along the west edge of the Siuslaw National Forest including ODF regulated use area SL-2.

Zone 602 – North Oregon Coast Range

Represents the east slopes of the North Oregon Coast Range. Mostly private land under ODF protection.

Bounded on the west by North Oregon Coast Range crest. Bounded on the east by the west periphery of the Willamette Valley and Columbia River. Extends north-south from the Columbia River to Oregon State Highway 22.

Zone 665 – East Willapa Hills

Represents mostly private land protected by DNR and covers the east slopes of the Willapa Hills. The zone includes western Cowlitz County, bounded on the north by the Cowlitz and Lewis county border. Bounded on the east along a line from near Toutle to Interstate 5 at Castle Rock. Bounded on the south by the Columbia River.

Zone 603 – Central Oregon Coast Range

Represents the east slopes of the Central Oregon coast range. Mostly ODF protected private land.

Bounded on the west by the Coast Range crest. Bounded on the east by the western periphery of the Willamette Valley. The north boundary is along Oregon State Highway 22. The south boundary lies along Oregon State Highway 38.

Zone 604 – Willamette Valley

Bounded on the west and east by the foothills of the Coast Range and Cascades. Extends north-south from the Columbia River to just south of Cottage Grove Reservoir.

Zone 667 – Clark County Lowlands

Bounded on the west by the Columbia River and on the east by the South Washington Cascade foothills. Extends north-south from Lewis County to the Columbia River.

Zone 605 – North Oregon Cascade Foothills

Represents foothill elevations of the North Oregon Cascades. Mostly ODF protected private land.

Bounded by the east periphery of the Willamette Valley on the west and the National Forest boundary of the Mt. Hood and Willamette National Forests on the east. Extends from the Columbia River on the north, to the Crabtree Creek Divide, approximately 10 miles south of Oregon State Highway 22 (Santiam Highway) on the south.

Zone 606 – Central Oregon Cascade Foothills

Represents the foothill elevations of the Central Oregon Cascades. Mostly ODF protected private land.

Bounded by the east periphery of the Willamette Valley on the west (Interstate 5 south of Eugene) and the Willamette Forest boundary, and extreme north Umpqua Forest boundary on the east. Extends from Crabtree Creek Divide roughly 10 miles south of Oregon State Highway 22 on the north to the Lane/Douglas county line on the south.

Zone 607 – North Oregon Cascades

Represents all of the Mt. Hood NF west of the Cascade Crest along with interior Cascade wilderness areas.

Bounded by the Columbia River on the north, the Cascade Crest on the east, and the Mt. Hood forest boundary on the south and west.

Zone 608- Central Oregon Cascades

Represents the Willamette NF in its entirety along with interior high Cascade wilderness areas.

Bounded by the Cascade Crest on the east and the Willamette Forest boundary on the south, west, and north.

Zone 660 – South Washington Cascades and Foothills

Represents the Wind River and St. Helens Ranger Districts of the Gifford Pinchot NF, as well as adjacent Washington state DNR protected Cascade and Green Mountain foothills to the south and west. This zone excludes the Columbia River lowlands of Clark County, WA and much of the Mt. Adams Ranger District.

Bounded on the east by the Gifford Pinchot forest boundary to the Indian Heaven Wilderness. The zone also includes the northeast peninsula north of Mt. Adams to the southeast boundary of FWZ659 and the northwest boundary of FWZ681. The southeast boundary follows the Columbia River west to the Clark County, WA line. The north and northwest boundary follows the contour of the Cascade Foothills to the Lewis River, then west along the Lewis River to the Columbia River. The zone boundary follows the Columbia River to Kelso, WA. The north boundary extends from Kelso, WA northeast following the contour of the Green Mountain/Cascade foothills to the Lewis County line.

Zone 663 – Eastern Gifford Pinchot including Mt. Adams District

Represents much of the Mt. Adams Ranger District. Bounded north of the Columbia River Gorge, at the boundary of the Columbia Gorge Natural Scenic Area, directly opposite FWZ607 on the Oregon side and including the current south boundary of FWZ660. This zone starts near Augspurgen Mtn. and then closely follows the Pacific Crest Trail (PCT) to the south flank of Mt. Adams. The boundary would lie along the west side of the Indian Haven Wilderness. The east boundary would be the existing zone 660 and neighboring WFO zones 639 and 681. The zone includes the community of Trout Lake and includes the Buck Creek RAWS station.

PORTLAND FORECAST AREA NFDRS STATION LIST

ZONE	NUMBER	NAME	TYPE	AGENCY	LAT	LON	ELEV	ASPECT	T	R	S
601	350208	Tillamook	R	ODF	45.26	-123.5	22	Flat	1S	9W	29
	350215	Cedar Creek	R	USFS	45.21	-123.77	2240	Ridgetop	4S	9W	22
664	450404	Willapa	M	DNR	46.6	-123.6	60	W-in valley	13N	8W	10
	450407	Huckleberry	R	DNR	46.5	-123.4	2500	S-on mid-slope	12N	6W	22
602	350216	South Fork	R	ODF	45.58	-123.49	2120	S-on ridge	1N	7W	12
	350308	Miller	R	ODF	46.02	-123.27	1090	S-in valley	6N	5W	11
	350113	Tidewater	R	ODF	46.01	-123.56	2035	Ridge	6N	7W	9
	350505	Rye Mountain	R	BLM	45.22	-123.53	1960	S-on ridge	4S	7W	9
665	451207	Castle Rock	R	DNR	46.27	-122.89	213	S-in valley	9N	2W	14
	451209	Abernathy Mtn.	R	DNR	46.35	-123.1	2000	Ridgetop	10N	3W	19
603	351710	Rockhouse1	R	ODF	44.93	-123.47	2000	Midslope	7S	7W	
	351811	Wilkinson Ridge	R	USFS	44.33	-123.72	1370	W-on ridge	14S	9W	24
	352542	Clay Creek	R	ODF	44.02	-123.21	1600		19S	7W	29
	352547	Village Creek	R	BLM	44.25	-123.47	1500	SE-on ridge	16S	7W	1
	353047	Devil's Graveyard	R	BLM	43.72	-123.63	1550	NW-near ridge	21S	8W	27
	350605	Gellatly	R	ODF	44.61	-123.48	860	NW-lower slope	11S	7W	13
	352550	High Point	R	BLM	43.91	-123.38	1935	N-on ridge	19S	6W	23
604	352561	Willow Crk.	R	BLM	44.03	-123.17	456	Valley	18S	4W	4
	351813	Finley	R	USFWS	44.42	-123.33	330	Valley	13S	5W	20
667	451306	Vancouver	M	DNR	45.7	-122.7	210	Flat	2N	1E	28
605	350727	Horse Creek	R	BLM	44.94	-122.4	2000	Ridge	7S	3E	23
	350728	Eagle Creek	R	ODF	45.37	-122.33	744	SW-midslope	2S	4E	28
606	352024	Yellowstone	R	BLM	44.6	-122.42	3080	NE-in valley	11S	3E	22
	352025	Jordan	R	ODF	44.72	-122.69	778	In valley	10S	1E	9
	352552	Trout Creek	R	BLM	44.11	-122.58	2400	SW-on ridge	17S	2E	9
	352562	Green Mtn.	R	BLM	43.73	-122.81	3064	Ridge	21S	1W	21
	352553	Brush Creek	R	BLM	44.28	-122.85	2300	N-on ridge	15S	1W	7
607	350718	Red Box	R	USFS	45.03	-121.92	3250	SW-on midslope	6S	7E	23
	350725	Si Si Lookout	M	USFS	44.92	-121.83	5617	SW-on ridge	7S	8E	33
	350726	Wanderer's Peak	R	USFS	45.11	-122.2	4350	S-on ridge	5S	5E	28

608	350604	Log Creek	R	USFS	45.51	-121.9	2500	W-on midslope	1S	7E	12
	350902	Clear Lake	M	USFS	45.15	-121.58	4458	W-on ridge	5S	10E	8
	352554	Pebble	R	USFS	44.23	-121.98	3560	SW-on midslope	15S	7E	29
	352557	Fields	R	USFS	43.73	-122.28	3360	Flat-on ridge	22S	4E	11
	352558	Emigrant	R	USFS	43.47	-122.22	3840	S-on ridge	24S	5E	21
612	351909	Boulder	R	USFS	44.98	-122	3570	Flat-in valley	10S	7E	7
	351604	Cannibal	R	USFS	44.35	-123.89	1946	Ridgetop	14S	10W	16
	352545	Goodwin Peak	R	USFS	43.93	-123.89	1826	Ridgetop	19S	10W	9
660	352559	Dunes	R	USFS	43.96	-124.12	20	Midslope	18S	12W	34
	451208	Elk Rock	R	USFS	46.35	-122.6	2500	Ridgetop	10N	3E	35
	451921	Canyon Creek	R	USFS	45.92	-122.17	2500	W-on ridge	5N	5E	8
	451929	3 Corner Rock	R	DNR	45.72	-122.04	3000	Ridge	3N	6E	26
663	451924	Dry Creek	R	USFS	45.94	-121.99	2549	SE-on ridge	5N	7E	6
	451301	Larch Mtn.	R	DNR	45.72	-122.35	1150	Ridge- top	3N	4E	29
	451917	Buck Creek	R	USFS	46.06	121.54	2690	Meadow	7N	10E	34